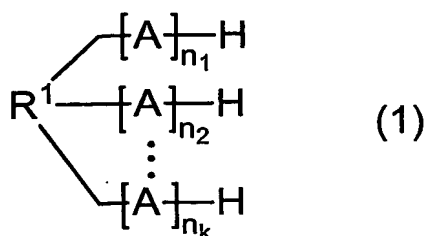
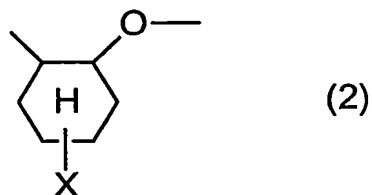


Claims

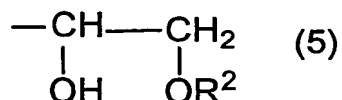
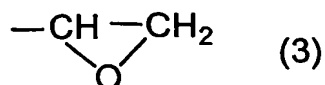
1. A radiation-sensitive negative-type resist composition for pattern formation containing an epoxy resin,
 5 a radiation-sensitive cationic polymerization initiator, and
 a solvent for dissolving the epoxy resin therein,
 characterized in that the resist composition, through drying,
 forms a resist film having a softening point falling within a
 range of 30 to 120°C and that the epoxy resin is represented
 10 by formula (1):



(wherein R¹ represents a moiety derived from an organic compound having k active hydrogen atoms (k represents an integer of 1 to 100); each of n₁, n₂, through n_k represents 0 or an integer of 1 to 100; the sum of n₁, n₂, through n_k falls
 15 within a range of 1 to 100; and each of "A"s, which may be identical to or different from each other, represents an oxycyclohexane skeleton represented by formula (2):



(wherein X represents any of groups represented by formulas (3) to (5):



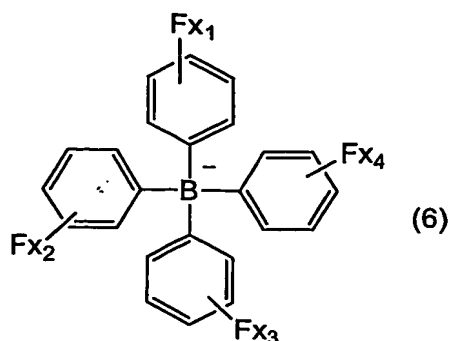
(wherein R^2 represents a hydrogen atom, an alkyl group, or an acyl group), and at least two groups represented by formula

5 (3) are contained in one molecule of the epoxy resin)).

2. A radiation-sensitive negative-type resist composition for pattern formation according to claim 1, wherein the radiation-sensitive cationic polymerization initiator comprises one or more sulfonium salts.

10 3. A radiation-sensitive negative-type resist composition for pattern formation according to claim 1 or 2, wherein the radiation-sensitive cationic polymerization initiator has one or more anion moieties, at least one species of the anion moieties being SbF_6^- .

15 4. A radiation-sensitive negative-type resist composition for pattern formation according to any one of claims 1 to 3, wherein the radiation-sensitive cationic polymerization initiator has one or more anion moieties, at least one species of the anion moieties being a borate
20 represented by formula (6):



(wherein each of x_1 to x_4 represents an integer of 0 to 5, and the sum $x_1 + x_2 + x_3 + x_4$ is 1 or more).

5. A radiation-sensitive negative-type resist composition for pattern formation according to any one of claims 1 to 4, wherein the epoxy resin has a softening point of 30°C or higher.

6. A method for forming a pattern, characterized in that the method comprises: a first step of applying to a substrate a radiation-sensitive negative-type resist composition for pattern formation as recited in any of claims 1 to 5; a second step of drying the substrate coated with the radiation-sensitive negative-type resist composition for pattern formation, to thereby form a resist film; a third step of selectively exposing the formed resist film to an active energy beam according to a desired pattern; a fourth step of heating the exposed resist film so as to enhance a contrast of a pattern to be formed; and a fifth step of developing the heated resist film, to thereby remove the unexposed area of the resist film through dissolution, thereby forming a patterned layer.

7. A method for forming a pattern according to claim 6, wherein the resist film has a thickness of at least 50 μm .

8. A method for forming a pattern according to claim 6 or 7, wherein the method includes, after completion of the fifth step, a sixth step of applying to the patterned layer a material other than that of the patterned layer such that spaces present in the patterned layer are filled, at least to some height, with the material, to thereby form a second layer.

10 9. A method for forming a pattern according to claim 8, wherein the second layer is formed through metal plating.

10. A method for forming a pattern according to claim 8, wherein the second layer is formed by casting a photo-curable or heat-curable resin and curing the resin by light or heat.

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